

Form NP

NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Lindenwood University

Program Title: Mathematics

Degree/Certificate: Bachelor of Science

CIP Classification: 270399 (Please provide a CIP code)

Implementation Date: 2003

Expected Date of First Graduation: 2007

AUTHORIZATION

Jann Weitzel/ VP for Academic Affairs

Name/Title of Institutional Officer

Signature

Date

Jann Weitzel, Ph.D.

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Person to Contact for More Information Telephone

BACHELOR OF SCIENCE
IN
MATHEMATICS

A Proposal Submitted to the
Coordinating Board for Higher Education

By

Lindenwood University

MISSION AND PLANNING PRIORITIES

Lindenwood University is an independent, liberal arts university serving nearly 15,000 students in a broad range of academic programs. The proposed Bachelor of Science in Mathematics will be offered through Lindenwood University's School of Sciences. It will serve that audience of students who wish to pursue an undergraduate degree in which the management skills necessary to start and operate a business, or continue a family-operated business, are emphasized in an academic, liberal arts setting. The Bachelor of Science in Mathematics is both compatible and consistent with the goals and objectives of the School of Sciences and the mission of the University.

NEED FOR THE PROPOSED PROGRAM

Mathematics majors can expect to work in jobs ranging from teaching high school, to pension consulting and risk analysis, to computer simulations, to statistical analysis. Other positions involve business development, systems analysis and design, systems and networks operation. Mathematics provides a very strong background for study of law, engineering, or economics. The greatest strength of Mathematics is in providing the firm foundation in the fundamental rules of abstraction and expression. Mathematics shapes the way one thinks about problems and hones one's ability for analytical thought. It provides excellent background to model data, determine the optimal information, and to understand spatial and temporal relationships.

The University's Bachelor of Science in Mathematics curriculum will consist of a blend of courses that provide students with a sound underpinning in core mathematics subjects together with several options to prepare students for different career opportunities.

FACULTY RESOURCES

The Mathematics faculty of the School of Sciences includes the following full-time instructors:

Beane, Robbie (2010)

Assistant Professor of Mathematics

B.S., M.S., University of Missouri-Rolla; Ph.D., Missouri

University of Science and Technology

Benjamin Carr (2010)

Assistant Professor of Mathematics

B.S., St. Lawrence University; M.A., Ph.D., Bowling Green State University

Dunn, Gerald (2007)

Associate Professor of Mathematics

B.S., University of New Orleans; Ph.D., University of Michigan

Golik, Wojciech L. (2001)

Professor of Mathematics and Chair, Department of Mathematics

B.S., M.S. Poznan University of Technology, Poznan, Poland;

M.S., Ph.D., New Mexico State University

Johnston, Christopher (2006)

Associate Professor of Mathematics

B.S., University of Missouri-Columbia, M.A., Michigan State

University, Ph.D., Northeastern University

Menninga, Nadine L. (2007)

Assistant Professor of Mathematics

B.A., North Central College; A.M., Ph.D., University of Illinois

PROGRAM STRUCTURE

Bachelor of Science in Mathematics

The Bachelor of Science in Mathematics Degree will accept any student who meets the University's admission requirements.

The degree is offered in a 128 hour program consisting of: 49 hours of general education requirements (required of all Lindenwood students), 49 hours of core courses in mathematics, computer science and physics, 9 hours of approved mathematics electives, and 22 hours of free electives.

Core Mathematics Courses:

MTH 24100, Statistics for Science Majors

MTH 27100, Calculus I

MTH 27200, Calculus II

MTH 29000, Intro to Advanced Mathematics

MTH 30300, Calculus III

MTH 31100, Differential Equations

MTH 31500, Linear Algebra

MTH 32000, Algebraic Structures

Core Computer Science Courses:

CSC 10000, Introduction to Computer Science

CSC 14400, Computer Science I

CSC 18400, Computer Science II

Core Physics Courses:

PHY 30100, General Physics I

PHY 30200, General Physics II

Approved Mathematics Electives; students must select 3 of the following:

MTH 31300, History of Mathematics

MTH 33000, Geometry

MTH 34100, Probability and Statistics
MTH 35100, Numerical Methods
MTH 36100, Applied Engineering Mathematics
MTH 39000, Special Topics in Applied Mathematics
MTH 49000, Special Topics in Mathematics

ENROLLMENT/GRADUATION PROJECTIONS

Year	2007	2008	2009	2010	2011
Full Time	12	14	15	17	19
Part Time	3	5	5	6	6
Graduates	4	7	8	8	9

LIBRARY RESOURCES

The Butler Library on the campus of Lindenwood University has adequate resources to support existing bachelor and graduate degrees. There is easy access to the Internet and other electronic resources. Additionally, materials can be secured through inter-library loan.

ADMINISTRATION AND EVALUATION

The Dean of the School of Sciences will direct the Bachelor of Science in Mathematics with the assistance of the Chair of Mathematics Department.

Evaluation will involve faculty assessment of students, student assessment of faculty, course assessment by both faculty and students, program assessment by students, faculty, employers, and interaction with the professional community. Assessment of students will include, but is not limited to, quizzes, exams, projects, papers, oral presentations, and class participation. Data on placement and professional advancement of the program's graduates will also be part of the evaluation process. Assessment procedures will result in program modification as needed.

DUPLICATION OF THE PROPOSED PROGRAM

At least 7 universities in the St. Louis area offer bachelor degrees in mathematics.

According to the US Bureau of Labor Statistics: "Employment of mathematicians is expected to increase by 22 percent during the 2008–18 decade, which is much faster than average for all occupations. Advancements in technology usually lead to expanding applications of mathematics, and more workers with knowledge of mathematics will be required in the future. However, jobs in industry and government often require advanced knowledge of related scientific disciplines in

addition to mathematics. The most common fields in which mathematicians study and find work are computer science and software development, physics, engineering, and operations research. Many mathematicians also are involved in financial analysis and in life sciences research."

Lindenwood University, founded in 1827, is the oldest university west of the Missouri river. The Bachelor of Science in Mathematics addresses the needs of existing and potential students, and demonstrates Lindenwood University's commitment to remaining among the leading universities in the St. Louis region.